



## Klamath Network Featured Creature

### June 2010

### *Western Green Drake* (*Drunella doddsii*, *D. spinifera*, *D. grandis*)

#### FIELD NOTES:

##### General Description:

The “Green Drake” is a common name for a group of Mayflies (Ephemeroptera) of the genus *Drunella*. The history of the name is probably from the British Isles, but was used for a different family of mayflies there and in the Eastern US, as well. However, in the West, the adults loved by fly fishing fanatics look morphologically similar, so the name was adapted to the western group of species.

Nymphs of Green Drakes are robust mayflies with three tails. They are often covered in hard, spiny protuberances. These spines are generally considered to be a deterrent to fish predation; research has shown Green Drake nymphs in streams with trout have heavier exoskeletons and longer tail filaments, when compared to nymphs from fishless streams. They are large for mayfly nymphs, and can obtain body sizes of up to 15 mm (0.6 inches).

Adults are also large for mayflies, from between 11 to 16 mm (0.4 to 0.6 inches). The mayfly adulthood spans two life stages (unique for insects): the sub-imago (pictured to the right) and the imago (called dun and spinner, respectively, by anglers). The sub-imago Green Drake is olive to brown-olive, with smokey wings. They often have yellow highlights. The imago stage, which is the sexually mature adult, has clear wings and the body is usually brown to red-brown.

##### Where to See It in the Klamath Parks:

The Klamath Network Wadeable Stream pilot project collected Green Drake nymphs in 70% of the samples collected in Redwood National and State Parks. As a widespread western group, they are likely found in Oregon Caves, Whiskeytown, Lassen Volcanic, and Crater Lake, but not Lava Beds.



<http://www.usu.edu/buglab>



[www.benthos.org](http://www.benthos.org)



<http://www.troutnut.com>

##### More Information:

For the entomologist among us:  
Edmunds, G. F., et al. 1976. The mayflies of North and Central America. University of Minnesota Press.

And for the fly fishing aficionado:

[www.troutnut.com](http://www.troutnut.com)

##### Reproduction and Development:

The nymph stages last about 9 to 11 months, often depending on local conditions. After achieving peak size, the nymph emerges from the stream, either by floating on the water surface or by crawling on streamside rocks or vegetation. The sub-imago: the adult-like sexually immature stage, then lasts for 20 to 30 hours, before a final metamorphosis into the sexually mature adult.

As a sexually mature adult, the imago stage participates in a mating flight. These mating flights can be anywhere from 5 to 100 feet in the air, and can often be seen swarming in a dense cloud of mayflies at dusk. After a long, intense romance lasting all of a few minutes, the female oviposits (places the eggs) in the water at a place of her choosing.

##### Diet:

Green Drakes nymphs are probably omnivorous, eating algae and detritus at smaller stages, but are predatory in their final nymphal stages, eating other small invertebrates, including other mayflies.

The adult Green Drakes have no mouthparts or digestive tract, so diet is a moot point.

##### Habitat:

Green Drakes are typical of clear, cool, “trout” streams, i.e., pristine, moderately to fast flowing streams. They typically hang out on cobble-sized substrate and can tolerate fast currents. They need streams free of sediments, which make them useful for bioassessment.